

THE SCOTCH CALAMITY.

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DETAILS OF THE CATASTROPHE.
THIRTEEN GIRDERS OF THE BRIDGE GONE—A
RICANE BLOWING AT THE TIME.
LONDON, Monday, Dec. 29, 18
The train which fell into the Tay left Edinburgh

at 4:15 in the afternoon. It consisted of four to five classes cars, one first-class and one second-class car, the brakemen's van car. At the last station before entering the bridge the tickets were taken, and the train was then crowded.

Vast quantities of wreckage, such as the doors and the roofs of the carriages, pieces of the bridge, articles of wearing apparel, are coming ashore. The entire thirteen girders of the long central span of the bridge are gone. The night was one of bright moonlight, but the wind was blowing a hurricane.

A RAILROAD MANAGER'S REPORT.

The manager of the North British Railway, graphing from London, stated that the morning of the disaster found several large girders, along with the train from Edinburgh, were precipitated into the river last night. There were nearly 300 passengers beside the company's servants, all of whom are believed to have perished."

A GREAT FALL.

A dispatch from Edinburgh, dated at 4 o'clock this morning, said that the wreckage of the bridge which fell consisted of several large superincumbent girders at the central and navigable portion of the river, which averaged from 40 to 45 feet in de-

The train would fall about 88 feet before reaching the water. Some time elapsed before the nature of the disaster was ascertained. The damage to the wires on the bridge and the badness of the weather interfered with the transmission of the news, and it is unknown whether the girders were blown down before the train entered the bridge or were carried away by the water.

A telegram from Dundee states that only fifty passenger tickets were taken up at the last stoppage place; but these do not account for the number of young children requiring no tickets, nor for the number of railway employes or passengers for Brodie Ferry, whose tickets were not taken up. However, if this statement is correct, it is evident that the total number of survivors is overestimated.

ANOTHER ESTIMATE OF THE LOST.

A dispatch from Dundee to the Press Association asserts that the number of lives lost by the Bridge disaster does not exceed 90. This is probably an underestimate.

The bodies of six of the victims have been recovered.

The Provost of Dundee and a party of citizens who accompanied him in a steamer to the scene of the disaster have returned to that city. A search was made about the bridge for small boats, but traces of any survivors could be found.

The gap in the bridge is about half a mile long, and the longest span is the longest arch, each 245 feet in length, and one a span of 145 feet in length. The bridge was about a mile long, and had 85 spans, the widest being the longest, and the highest point it was 150 feet above high water.

The Government has sent two inspectors to ascertain the particulars of the Tay Bridge disaster, and to make a full and complete inquiry into the occurrence. Divers have thus far been unable to discover the wrecked train. They make another effort to-day. The place where the wrecked train was is about 100 feet from the shore, and the drowned are not recovered within a few days they will become imbedded, with the cars, beyond recovery.

The Queen has telegraphed to the Provost of Dundee tendering her condolence with the bereaved.

Only one body has so far been recovered, and in a very mutilated condition.

The railway authorities last evening estimated total number of lives lost at seventy-five.

THE LATEST CALCULATION.

LONDON, Tuesday, Dec. 30, 1879.
Various accounts agree in placing the total loss
of the bridge at the disastrous amount of £100,000.

THE WRECKED BRIDGE DESCRIBED.

THE EXTENT OF THE GREAT STRUCTURE—ITS LI-
VING FEATURES.

The great bridge across the mouth of the River Tay was constructed to shorten the railway journey between Edinburgh, Dundee and other ports, by giving it a direct route from Perth. The length of the bridge, the distance by rail from Edinburgh to Dundee was reduced to thirty-seven miles thereby obviating a long detour by way of Perth. According to an account given in *The New York Scotsman*, last year, an agreement was entered into in May, 1871, between the North British Railway Company and Charles De Burca, of Glasgow, who represented the local authorities, whereby the latter almost immediately after signing the agreement he became suddenly ill, and could not take an active part in its construction. His death in 1873 necessitated the transfer of the contract to Messrs. Hockings, Gilkes & Co., of Midlothian, Scotland, who were afterwards joined by Mr. De Burca's managers, laid down a principle which was of the greatest bearing on the success of the work, to be dispensed with the staging and scaffolding which are generally used in bridge building. The piers and girders were to be erected on solid foundations, and the decked out as they came into conformity with which this principle was carried out would distinguish this bridge from all others. The materials employed were of the best quality, and the details were less remarkable. No matter of what material the piers were constructed whether they were masonry or iron, they were to be finished with a coat of red above two hundred tons, or iron girders of one hundred and ninety tons each, were all finished in stone color, and painted with white.

The road, at the side of the bridge, is about two miles long, and with the exception of a short section, runs along the centre the rock slopes down to too great depth to be useful, and is covered by, first, a stratum of gravel, and secondly, a layer of sand. In some places gravel is found at depths of about eighteen feet, and sold as to be quite capable of supporting the weight of the bridge. The surface of the river bed consists of spans of varying lengths. These piers, which stand in the middle of the river, are built of brickwork set in Portland cement, and are coated with a mixture of greenish-gray powder, but when mixed with sea-

becomes hard in a few minutes. The first fourteen piers from the south side are entirely built with it to a very top, and all the others up to five feet above the water, where the iron work begins. When mixed with sand and gravel, or broken stones, in certain proportions, it forms concrete, which takes the shape of any cavity into which it is put, and in a few days becomes as hard as a stone. It largely enters into the construction of the lower parts of all the piers, and has the advantage of be-

At the place where the bridge gave way thirteen the spans were 245 feet long, and the piers were so high that at the highest water there were 88 feet of clear water-way left—more than sufficient for the largest vessels plying from Dundee to the places above bridge. The girders composing the spans were placed so wide apart that the trains could pass

Between the roadway being fixed at the bottom of the bridge, the bridge itself was a great height was not required, and the piers were kept much lower, the top of the spans being level with the bottom of the large openings. The bridge was supported by the sides of the girders. In this manner the roadway formed an unbroken line, while there seemed to be a step in the roadway at the bottom of the bridge. The view from the structure showed the roadway as a continuous line, and by means to perform the wonderful acrobatic feat which was a view from a distance. On May 31, the first passenger train crossed the bridge, and the passenger and general traffic of the Bay Bridge was placed, with a delay of ceremonial by no means unimportant, in the hands of the great engineering enterprise. The estuary of a large and swift-moving river has witnessed this has been a triumph.

ny methods which are novel in the construction of bridges of such great length, have been secured, almost without, and almost as a consequence, great economy of material. The bridge has been ready for traffic for some time, and has already attracted the attention and the interest of the public and gentlemen in Great Britain interested in railway matters, and to several civil officials, special envoys, and members of the Government. It has invited guests to Leuchars junction, and from there to Newport. The train which crosses the bridge is a fine specimen of the modern stability of the noble structure, and quite enough to enable the guests to command a pleasant view of the magnificent scenery of the estuary of the Tay, seen in all the radiant loveliness of a bright summer day, with the smooth, swift river rolling far away to the sea, and the white cliffs of the Tay estuary. As the train perceptibly slowed, and the occupant caught a fleeting glimpse of the method of construction of the bridge, he was struck by the beauty of the bridge was hailed by the enthusiastic cheers of the immense assemblage of the inhabitants of Dundee, who were gathered on the banks of the river, and recently reclaimed from the estuary. The company were welcomed at Dundee station by the Provost and the leading volunteers of the city, and in procession from the station to the Albert Institute by way of Union-st. All along the route the guests were greeted by the people of the city, free from mills and other public works by the holiday granted in honor of the occasion. Flags flew from the houses, and the people of the city, the Albert Institute was profusely decorated with evergreens. In the great hall of the Institute luncheon was prepared by the ladies of the North British Railway for 600 gentlemen, and congratulatory speeches were made. Since the opening day the bridge has been in constant use, and its stability was hardly ever tested.